

Amendments to the Abstract:

Please cancel the previous Abstract and replace it with the following rewritten abstract.

Apparatus and methods for estimation and compensation of phase imbalance and gain imbalance are provided. A receiver for estimation or compensation of phase imbalance or gain imbalance utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code includes means for estimating the phase imbalance or gain imbalance prior to symbol synchronization. Thus, the phase imbalance and gain imbalance will not introduce losses in subsequent phases of signal processing.